



## Department of Health and Mental Hygiene

### Family Health Administration

Russell W. Moy, M.D., M.P.H., Director  
Joan H. Salim, Deputy Director

### Center for Maternal and Child Health

# CHILD DEATH REPORT 2004

Robert L. Ehrlich, Jr.  
Governor

Michael S. Steele  
Lt. Governor

S. Anthony McCann  
Secretary  
Department of Health and Mental Hygiene



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For comments, please contact:

William K. Adih, M.D., Dr.P.H.  
MCH Epidemiologist  
Center for Maternal and Child Health  
Maryland Department of Health and Mental Hygiene  
Phone: 410-767-6715  
E-mail: [wadih@dhmh.state.md.us](mailto:wadih@dhmh.state.md.us)

The report can be found at: <http://www.fha.state.md.us/mch/html/cfr>

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## INTRODUCTION

Childhood deaths are a major public health problem and many of these are preventable fatalities.

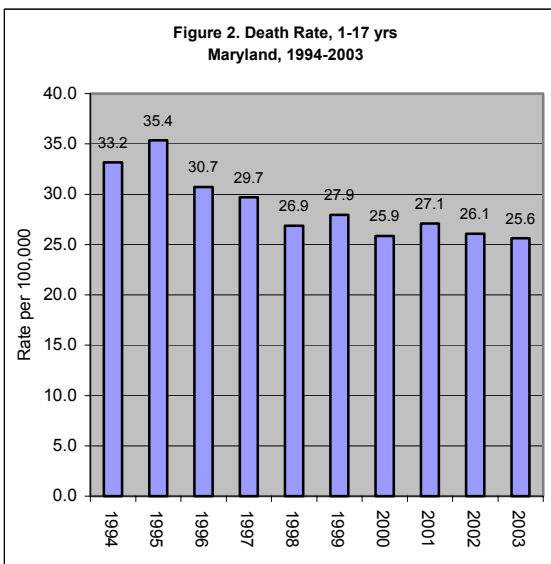
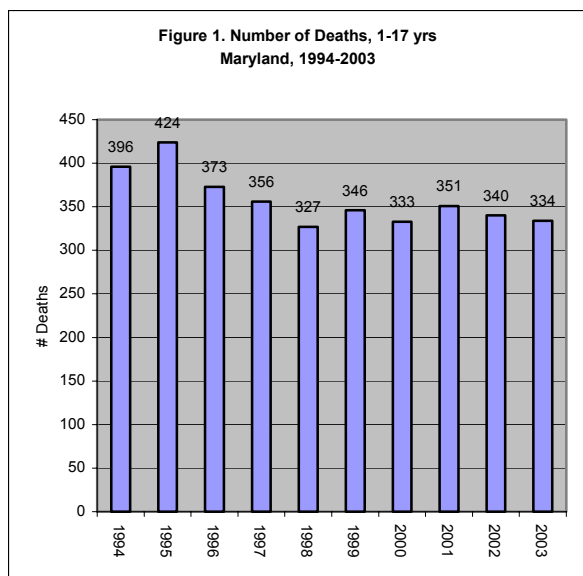
Surveillance of childhood deaths is one of the most important components of child death prevention. It helps to determine the magnitude of child mortality, the leading causes of death, and the population groups most affected. In addition, this data is crucial for evaluating the effectiveness of program activities and for identifying trends and problems that need further investigation.

Injuries are the leading cause of death in children aged 1-17 years. In 2003, in Maryland, unintentional injuries comprised 33 percent of all deaths among children ages 1 to 17 years, followed by homicides, malignant neoplasms, cardiovascular diseases, congenital malformations, and suicides. Overall, childhood death rates have declined during the past decade in Maryland and the U.S.

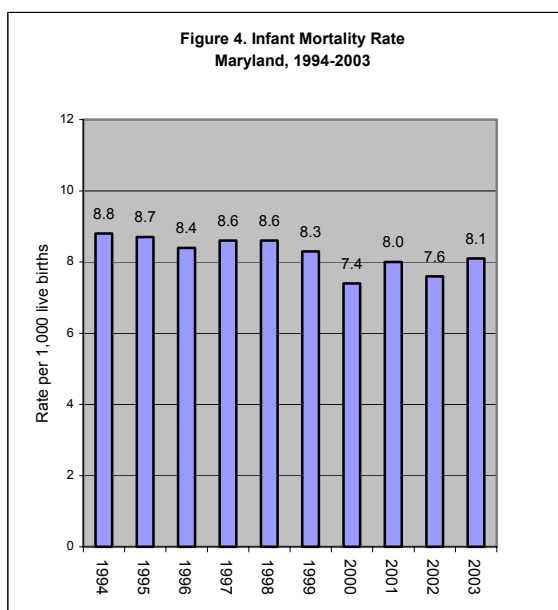
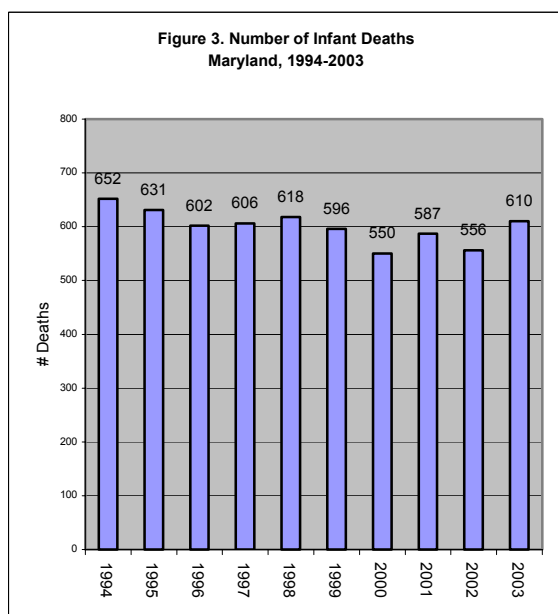
This report is based on existing data from the Vital Statistics Administration, Department of Health and Mental Hygiene. In the future, the report will incorporate data from the new State Child Fatality Review database, which is currently being developed. This database will also include qualitative findings and recommendations from local Child Fatality Review Teams.

## OVERALL TRENDS

In 2003, there were 944 deaths of infants and children under the age of 18 years in Maryland. This age range was utilized for this report because it encompasses the ages for which the State Child Fatality Review Team has responsibility. Overall, there has been a gradual decrease in the number and rate of both infant and child deaths in the state over the past decade. The infant mortality rate, however, rose to 8.1 per 1,000 live births in 2003. (Figures 1, 2, 3 and 4). It is important to note that many of these deaths in childhood could be prevented with appropriate interventions in both the public and private sectors.



Source: Analysis of data from Vital Statistics Administration, DHMH



Source: Infant Mortality in Maryland, Vital Statistics Administration, DHMH

Mortality rates are expressed as the number of deaths per a population measure in a given time period. Infant mortality rates are traditionally expressed as the number of deaths in the first year of life per 1,000 live births during the same year. However, other mortality rates are expressed as the number of deaths per the number in the population, usually per 1,000 or 100,000. To overcome the problems associated with the statistical manipulation of small number of events, some of the information in this report is based on combined years of data (three or five years). The average mortality rate for infants less than one year of age has decreased by 8.6 percent between the five-year periods of 1994-1998 and 1999-2003. The neonatal mortality rate (deaths to infants under 28 days of age per 1,000 live births) and the postneonatal mortality rate (deaths from 28 days through 11 months per 1,000 live births) declined by 5.9 percent and 15.0 percent respectively (Table 1). Overall, for children ages 1 through 17 years, the mortality rate fell by 14.9 percent and there was also a decline in mortality rates for young children and adolescents (Table 2).

**TABLE 1. NUMBER OF INFANT, NEONATAL AND POSTNEONATAL DEATHS BY RACE, DEATH RATES AND PERCENT CHANGE IN RATES\*\* FROM 1994-1998 TO 1999-2003, MARYLAND**

	Number of deaths		Death rates*		Percent change**	
	1994-1998	1999-2003	1994-1998	1999-2003		
Infant mortality*						
All races***	3109	2902	8.6	7.9	-8.6	****
White	1260	1156	5.7	5.2	-8.9	****
Black	1763	1655	15.3	13.7	-10.1	****
Neonatal mortality*						
All races***	2179	2095	6.1	5.7	-5.9	****
White	852	834	3.9	3.8	-2.8	
Black	1261	1193	10.9	9.9	-9.4	****
Postneonatal mortality*						
All races***	930	807	2.6	2.2	-15.0	****
White	408	322	1.9	1.5	-21.6	****
Black	502	462	4.4	3.8	-11.9	****

Source: Infant Mortality in Maryland, Vital Statistics Administration, DHMH

\*Rate per 1,000 live births

\*\*Percent change is based on the exact rates and not the rounded rates represented here

\*\*\*Includes races other than White and African American

\*\*\*\*Rates for 1994-1998 and 1999-2003 differ significantly (p<.05)

**TABLE 2. NUMBER OF DEATHS, DEATH RATES AND PERCENT CHANGE IN RATES FOR CHILDREN UNDER 18 YEARS, MARYLAND, 1994-1998 AND 1999-2003**

Age group	Number Deaths		Death Rates*		Percent change**
	1994-1998	1999-2003	1994-1998	1999-2003	
< 1 year	3,109	2902	868.2	792.1	-8.6***
1-17 years	1,876	1,704	31.1	26.5	-14.9***
1-4 yr	516	425	35.6	29.9	-16.1***
5-9 yr	315	282	17.0	14.8	-12.6
10-14 yr	392	367	22.6	18.5	-18.3***
15-17 yr	653	630	66.3	56.3	-15.1***

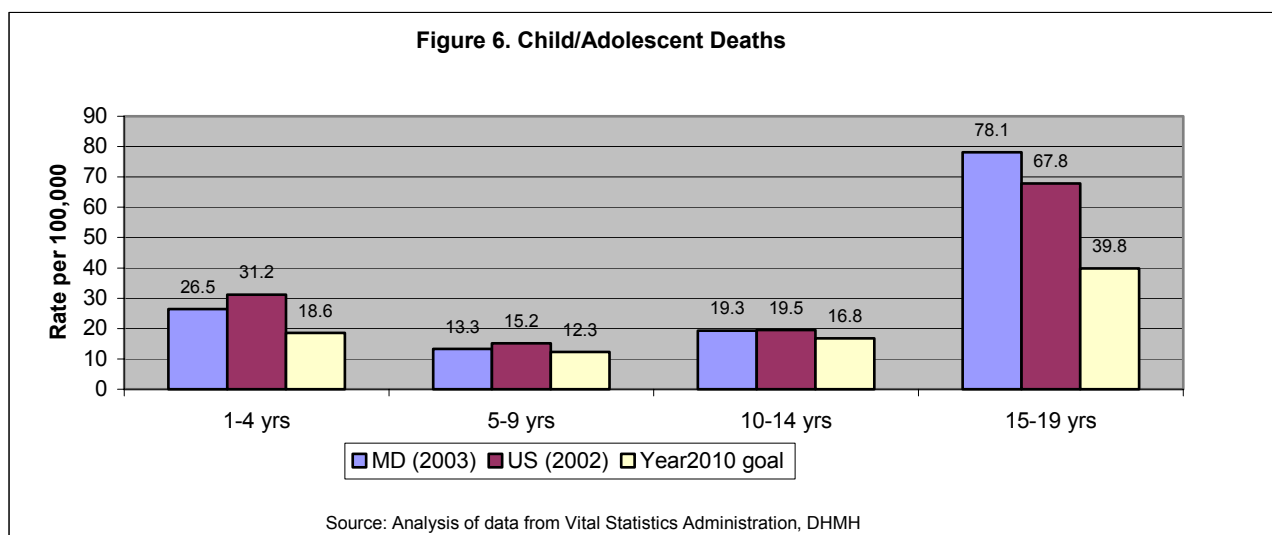
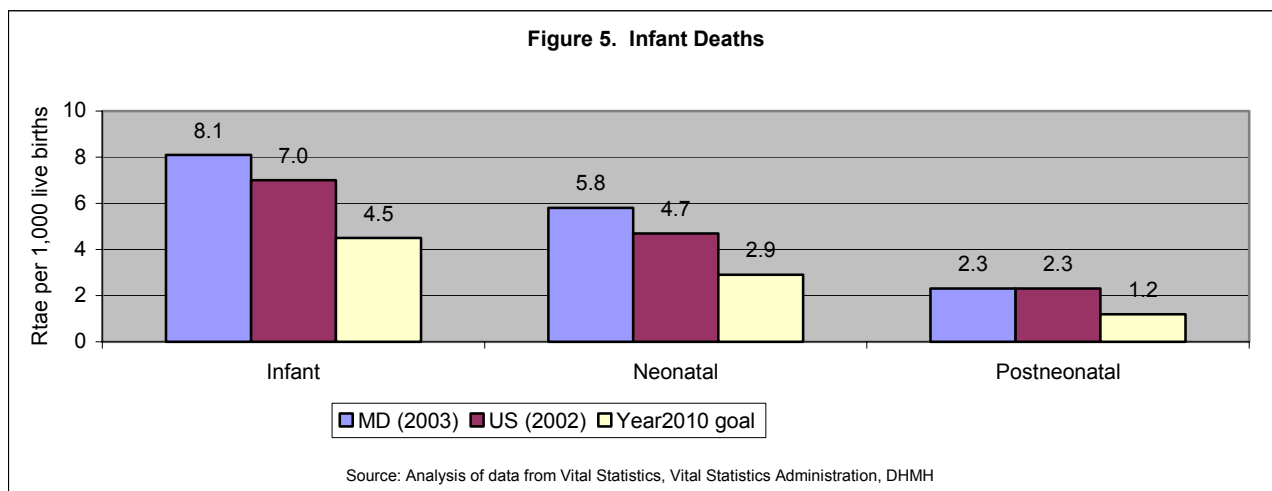
Source: Source: Analysis of data from Vital Statistics Administration, DHMH

\*Per 100,000 population in specified age group

\*\*Percent change is based on the exact rates and not the rounded rates presented here

\*\*\*Rates for 1994-1998 and 1999-2003 differ significantly (p<.05)

## COMPARISON TO NATIONAL STATISTICS



The absolute number of child deaths and mortality rates in Maryland decreased throughout the 1990's. The 2003 Maryland infant and neonatal mortality rates are higher than the 2002 national rate (the most current year for which national data is available). The Maryland postneonatal mortality rate, however, equals the national rate (Figure 5). In the age groups 1-4 years and 5-9 years, Maryland's mortality rates are lower than the national rates. In the older age groups, mortality rates approximate the national rate or are higher (Figure 6).

National objectives for infant and child mortality have been established in the Healthy People 2010 project of the United States Department of Health and Human Services. While Maryland is close to meeting several of these objectives, others remain a challenge. It is anticipated that progress will be realized now that jurisdictions have Child Fatality Review Infrastructure and the improved surveillance system will identify areas for appropriate intervention (Figures 5 and 6).

## DEMOGRAPHICS

In order to avoid preventable deaths in childhood, it is necessary to understand both the causes of death and which children are at particular risk. A breakdown of the age of death for children in Maryland in 2003 is presented in Table 3 and Figure 7.

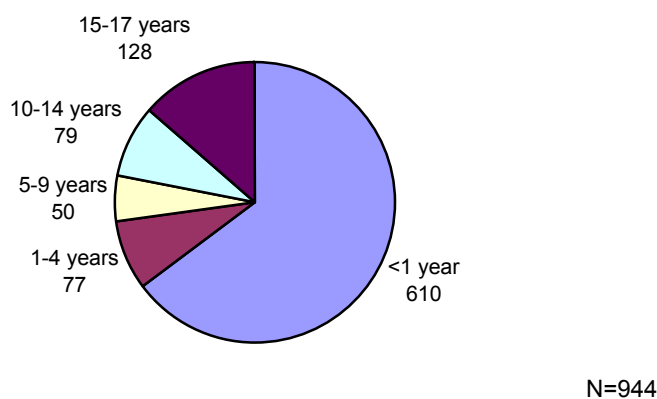
**TABLE 3. CHILD DEATHS UNDER 18 YEARS, MARYLAND, 2003**

Age group	# Deaths	% of Total
<1 year	610	64.6
<=28 days	435	46.1
29-365 days	175	18.5
1-4 years	77	8.2
5-9 years	50	5.3
10-14 years	79	8.4
15-17 years	128	13.6
<b>Total</b>	<b>944</b>	

Source: Analysis of data from Vital Statistics Administration, DHMH

Of the 944 deaths, 64.6 percent occurred in the first year of life with 46.1 percent of the total occurring in the first month of life. Therefore, efforts to lower overall child fatalities must be coordinated with activities specifically aimed at addressing infant deaths. Although mortality rates fall after infancy, they rise again during adolescence. Teens and young adults have approximately two or three times the number of fatalities as seen in younger children.

**Figure 7. Number of Child Deaths, 2003**



Source: Analysis of data from Vital Statistics Administration, DHMH

Gender and race also influence the number and rate of death. In 2003, of the 334 deaths among 1 to 17 year old children, 62.3 percent occurred in boys, representing a rate of 29.5 per 100,000. Among females, the death rate was 18.7 per 100,000 (Table 4).

This trend is also seen in infancy where 57.6 percent of the deaths were to boys.

African American children were at an increased risk of dying both in the first year of life and in later childhood. In 2003, African American infants died at 2.7 times the rate of white infants. This ratio remained elevated at 1.9 in children 1 through 17 years of age (Table 5 and Figure 8). The basis of these associations is not completely understood but must be addressed to prevent childhood deaths.

**TABLE 5. DEATHS, 1-17 YEARS, BY RACE, MARYLAND, 2003**

Race	# of Deaths	Rate*
African American	165	38.0
White	159	19.7
Am. Indian	1	15.9
Asian & Pac Is.	8	-
Other	1	-
<b>Total</b>	<b>334</b>	<b>24.2</b>
Hispanic (any race)	18	24.9
Ratio AA:W		1.9

Source: Analysis of data from Vital Statistics Administration, DHMH

\*Rate per 100,000 population

-Rates based on fewer than five events in the numerator are not presented since rates based on small numbers are likely to be unstable.

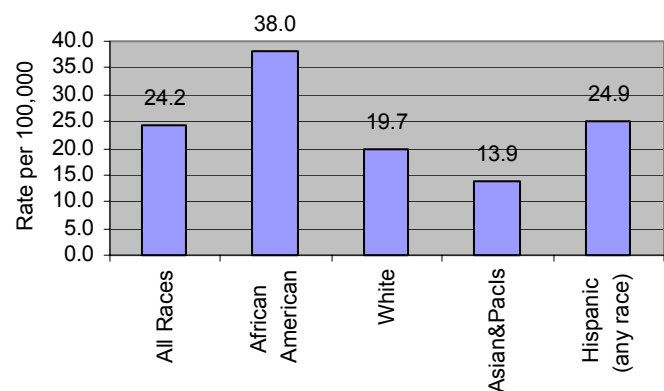
**TABLE 4. DEATHS, 1-17 YEARS, BY GENDER, MARYLAND, 2003**

Gender	Number of Deaths	% of total	Rate*
Male	208	62.3	29.5
Female	126	37.7	18.7
<b>Total</b>	<b>334</b>		<b>24.2</b>

Source: Analysis of data from Vital Statistics Administration, DHMH

\*Rate per 100,000 population

**Figure 8. Death Rate (1-17 yrs) by Race/Ethnicity Maryland, 2003**



Source: Analysis of data from Vital Statistics Administration. DHMH

## CAUSE OF DEATH

Understanding the underlying cause of death in childhood is necessary in order to develop strategies to prevent these events when possible. Specific causative factors vary significantly depending on the age of the child. In the first year of life, the leading causes of mortality relate to prematurity and low birthweight. In Maryland, compared to the U.S., excess numbers of preterm and low birthweight infants account for the higher infant mortality rate rather than excess mortality within birthweight groups. After the first month of life, Sudden Infant Death Syndrome (SIDS) and congenital anomalies are the leading causes of death in infancy. Table 6 presents the leading causes of infant mortality in 2003. The number of deaths is given in parenthesis. A more detailed review of infant mortality is presented in the Annual Infant Mortality Report prepared by the Department of Health and Mental Hygiene's Vital Statistics Administration. It can be found at <http://www.mdpublichealth.org/vsa>.

**TABLE 6. LEADING CAUSES OF INFANT DEATH, MARYLAND, 2003**

	<b>Neonatal (435)</b>	<b>Postneonatal (175)</b>	<b>INFANT (610)</b>
1	Short gestation, LBW (123)	SIDS (49)	Short gestation, LBW (138)
2	Congenital malformation (75)	Congenital malformation (24)	Congenital malformation (99)
3	Maternal complications (56)	Diseases of digestive tract (15)	Maternal complications (56)
4	Complications of placenta, cord (29)	Other sudden deaths (10)	SIDS (56)
5	Respiratory distress of newborn (23)	Assault (homicide) (9)	Complications of placenta, cord (29)
6		Diseases of circulatory system (7)	
		Necrotizing enterocolitis of newborn (7)	
	Bacterial Sepsis of Newborn (15)	Unspecified non-transport accident (7)	Respiratory distress of newborn (24)
7	Cardiovascular disorders originating in perinatal period (13)	Influenza & pneumonia (6)	Other sudden deaths (19)
8		Septicemia (4)	
	Necrotizing enterocolitis of newborn (9)	Bacterial sepsis of newborn (4)	
	Other sudden deaths (9)	Metabolic disorders (4)	Diseases of digestive tract (17)
9	Intrauterine hypoxia & birth asphyxia (8)		
	Intracranial non-traumatic hemorrhage of fetus & newborn (8)	Short gestation, LBW (3)	
		Other infectious diseases (3)	Necrotizing enterocolitis of newborn (16)
10	Newborn affected by other complications of labor & delivery (7)		
	SIDS (7)	Falls (accident) (2)	Cardiovascular disorders originating in perinatal period (13)
		Convulsion (2)	

Source: Analysis of data from Vital Statistics Administration, DHMH

## SUDDEN INFANT DEATH SYNDROME (SIDS)

SIDS is the sudden death of an infant under one year of age, which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history. SIDS remains the leading cause of death in the first year of life beyond the neonatal period. SIDS is of particular public health concern because it can be reduced through safe sleeping practices for infants and education regarding cultural practices for specific infant care issues. In Maryland, the number of deaths from SIDS has decreased throughout the 1990's with a 24.2 percent decrease between 1994-1998 and 1999-2003. In 2001-2003, there were 168 SIDS deaths. These deaths included other sudden infant deaths classified as Sudden Unexpected Deaths in Infancy (SUDI). SUDI includes cases where there is confirmation of bed-sharing and in which the possibility of asphyxia, due to unsafe sleeping surfaces, could not be ruled out.

Risk factors for SIDS include: 1) a physiological defect; 2) critical development period (SIDS risk peaks between two and four months of age); and 3) environmental stressors such as oxygen depletion while sleeping face down, exposure to prenatal or second-hand smoke, and overheating while wrapped in heavy blankets. Additionally, the mother's health and behavior during pregnancy and the infant's health before birth are important factors in the occurrence of SIDS.

Of the 168 SIDS deaths between 2001 and 2003, 97 (57.7 percent) were boys and 71 (42.3 percent) were girls. Sixty-two white infants died from SIDS, a rate of 0.5 per 1,000 live births. Among African-Americans, there were 103 SIDS deaths, representing a rate of 1.4 per 1,000. Eight Hispanic infants (any race) died from SIDS, a rate of 0.5 per 1,000 live births (Table 7 and Figure 9). The findings of gender difference and racial disparity mirror national data. Maryland's average SIDS death rate is over two times higher than the 2002 national rate (the most current year for which national data is available). The Healthy People 2020 goal calls for reducing death from SIDS to no more than 0.25 per 1,000 live births.

**TABLE 7. SIDS DEATHS, 1-17 YEARS, BY RACE/ETHNICITY, MARYLAND, 2001-2003**

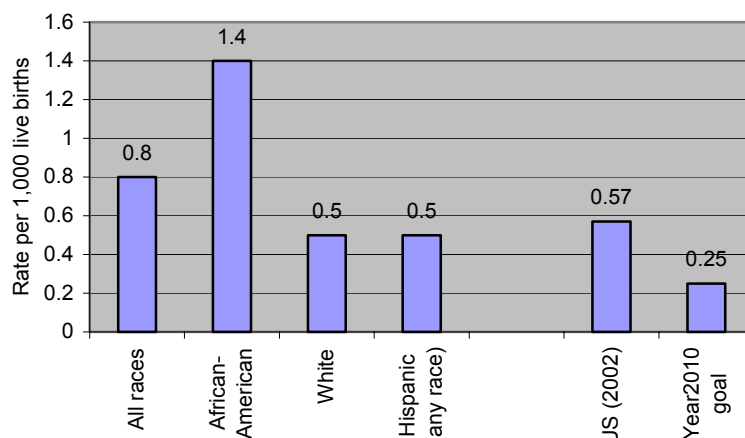
<b>Race</b>	<b># Deaths</b>	<b>Rate*</b>
African American	103	1.4
White	62	0.5
American-Indian	0	-
Asian or Pacific Is.	1	-
Other	2	-
<b>Total</b>	<b>168</b>	<b>0.8</b>
Hispanic (any race)	8	0.5

Source: Analysis of data from Vital Statistics Administration, DHMH

\*Rate per 1,000 population

-Rates based on fewer than five events in the numerator are not presented since rates based on small numbers are likely to be unstable.

**Figure 9. SIDS Death Rate by Race/Ethnicity Maryland 2001-2003**



## CAUSES OF DEATH AMONG OLDER CHILDREN

Table 8 shows the causes of death among children 1-17 years in 2003 and for the period 2001-2003. Figure 10 demonstrates the graphical distribution of the causes of death in 2003.

**TABLE 8. NUMBER OF DEATHS BY CAUSE**

**1-17 YEARS, MD, 2003 AND 2001-2003**

Cause of Death	2003	2001-2003
Unintentional Injuries (Accidents)	111	340
Transport	77	242
Non-Transport	34	98
Homicide	54	156
Cancer	33	103
Suicides	13	45
Cardiovascular	16	52
Congenital Malformations	20	53
Other	87	276
<b>Total</b>	<b>334</b>	<b>1025</b>

Source: Analysis of data from Vital Statistics Administration, DHMH

**Figure 10. Number of Deaths by Cause (1-17 years), Maryland, 2003**

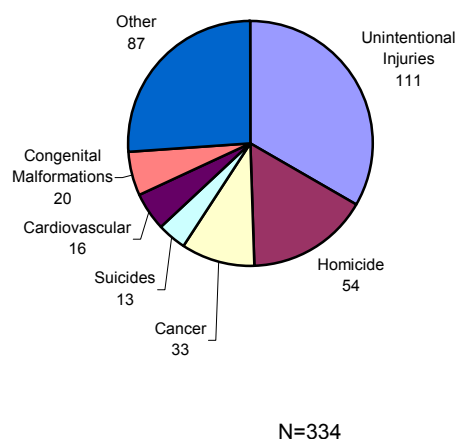


Table 9 shows the ranking by the number of deaths among the various childhood age groups (1-17 years) for the three-year period 2001-2003. The number of deaths is given in parenthesis.

**TABLE 9. LEADING CAUSES OF DEATH BY AGE GROUP, MARYLAND, 2001-2003**

Age	1-4 years	5-9 years	10-14 years	15-17 years
Rank	N=261	N=171	N=215	N=378
1	Unintentional Injury (63)	Unintentional Injury (61)	Unintentional Injury (62)	Unintentional Injury (154)
2	Malignant Neoplasms (28)	Malignant Neoplasms (26)	Malignant neoplasms (30)	Homicide (104)
3	Homicides (27)	Congenital malformations (11)	Homicide (18)	Suicide (29)
4	Congenital malformations (24)	Major Cardiovascular Diseases (10)	Suicide (16)	Malignant Neoplasms (19)
5	Major Cardiovascular Diseases (17)	Homicide (7)	Major Cardiovascular Diseases (9)	Major Cardiovascular Diseases (16)

## INJURIES

Injuries were the leading cause of death in children aged 1-17 years, with unintentional injuries accounting for the most common etiologies of mortality in every age group (Table 9).

Unintentional injuries constituted the leading cause of death (59.6) to children between 2001 and 2003. Homicide and suicide (intentional injuries) represented 27.4 percent and 7.8 percent respectively of all fatal injuries (Table 10 and Figure 11). Many of these injury deaths are preventable. Undetermined intent refers to cases where information is insufficient to enable a medical or legal authority to make a distinction between an accident, self-harm, and assault.

### *Vignette:*

*4-Year Old Girl Killed in Rowhouse Fire*

*Source: The Baltimore Sun,  
October 18, 2004*

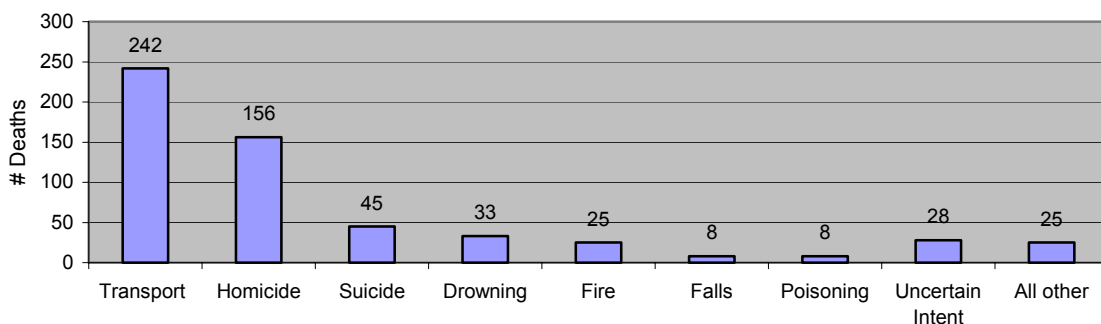
*“A 4-year old girl was killed and several family members – including an infant – were injured in a rowhouse fire in West Baltimore, authorities said. Fire fighters responding to a call 12:30 a.m. found fire in the first floor and basement of the two storey brick rowhouse. The cause of the blaze remained under investigation.”*

**TABLE 10. NUMBER OF INJURY RELATED DEATHS, 1-17 YEARS MARYLAND, 2001-2003**

Type of Injury	2001-2003	% of Total
<b>Unintentional</b>	<b>340</b>	<b>59.6</b>
<b>Transport</b>	<b>242</b>	
-MVA	217	
-Other	25	
<b>Non-Transport</b>	<b>98</b>	
-Falls	8	
-Drowning	33	
-Fire	25	
-Poisoning	8	
-Other	24	
<b>Homicide</b>	<b>156</b>	<b>27.4</b>
-Firearm	96	
-Other	60	
<b>Suicide</b>	<b>45</b>	<b>7.8</b>
-Firearm	12	
-Other	33	
<b>Legal intervention</b>	<b>1</b>	<b>0.2</b>
<b>Undetermined Intent</b>	<b>28</b>	<b>4.9</b>

Source: Analysis of data from Vital Statistics Administration, DHMH

**Figure 11. Injury Related Childhood Deaths (1-17 yrs) Maryland, 2001-2003**



Source: Analysis of data from Vital Statistics Administration, DHMH

## Motor Vehicle Accidents

Motor vehicle-related injuries are the leading cause of unintentional (accidental) injury death to children. Between 2001 and 2003, 217 children ages 1-17 years were killed in motor vehicle crashes (Table 11).

**TABLE 11. CATEGORY OF PERSONS KILLED IN MVA, 1-17 YEARS, MARYLAND, 2001-2003**

Person	Number	Percent
Driver of vehicle	31	14.3
Passenger	43	19.8
Pedestrian	44	20.3
Motorcycle rider	5	2.3
Pedal cyclist	10	4.6
Unspecified occupant of vehicle	22	10.1
Unspecified	62	28.6
<b>Total</b>	<b>217</b>	

Source: Analysis of data from Vital Statistics Administration, DHMH

**TABLE 12. UNINTENTIONAL TRANSPORT INJURY DEATHS BY RACE, 1-17 YEARS, MARYLAND, 2001-2003**

Race	MVA		Other Transport	
	Number	Rate*	Number	Rate*
African American	67	5.1	8	0.6
White	138	5.7	15	0.6
Am. Indian	1	-	0	-
Asian & Pac Is.	8	4.7	1	-
Other	3	-	1	-
<b>Total</b>	<b>217</b>	<b>5.6</b>	<b>25</b>	<b>0.6</b>
Hispanic (any race)	12	5.6	0	-

Source: Analysis of data from Vital Statistics Administration, DHMH

\*Per 100,000 population

-Rates based on fewer than five events in the numerator are not presented since rates based on small numbers are likely to be unstable

**TABLE 13. UNINTENTIONAL TRANSPORT INJURY DEATHS: NUMBER AND RATE BY AGE GROUP, 1-17 YEARS, MARYLAND, 2001-2003**

Age group	MVA		Other Transport	
	Number	Rate*	Number	Rate*
1-4	24	2.8	1	-
5-9	36	3.2	6	0.5
10-14	39	3.2	2	-
15-17	118	17.2	16	2.3
<b>Total</b>	<b>217</b>	<b>5.6</b>	<b>25</b>	<b>0.6</b>

Source: Analysis of data from Vital Statistics Administration, DHMH

\*Per 100,000 population

-Rates based on fewer than five events in the numerator are not presented since rates based on small numbers are likely to be unstable

The motor vehicle-related injuries included all deaths occurring to children who were drivers, passengers, pedestrians, or other types of occupants in a form of transport. For a fuller understanding of the circumstances surrounding cases listed as "unspecified," additional sources of information, such as police reports will be examined.

Of the 217 motor vehicle related deaths between 2001 and 2003, 144 (59.5 percent) were boys and 98 (40.5 percent) were girls. One hundred and thirty-eight white youths died in motor vehicle crashes, a rate of 5.7 per 100,000. Among African-American children, there were 67 motor vehicle-related deaths, representing a rate of 5.1 per 100,000 (Table 12). Older children bore the brunt of the cases, dying at the rate of 17.2 per 100,000 in the 15-17 year age group (Table 13).

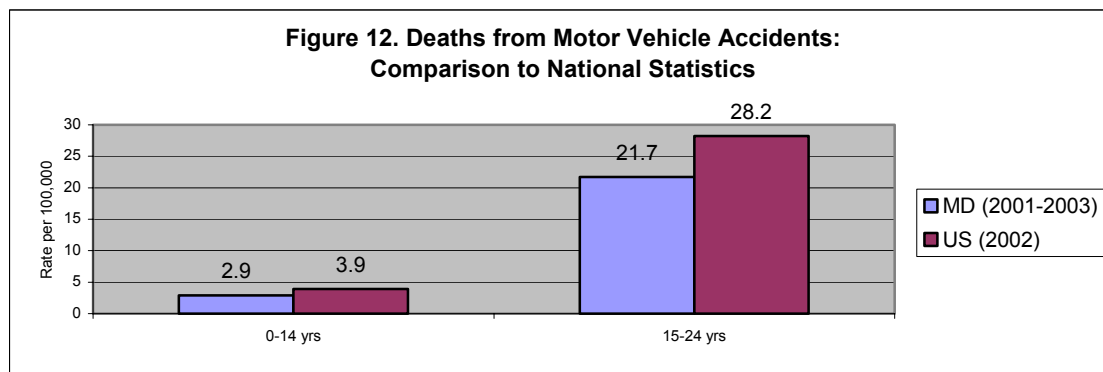
### *Vignette:*

*MD Teens Had Been Drinking, Police Say  
Washington Post, September 29, 2004*

*"A 17-year motorist who died in a crash that also killed one of his teenage passengers had a blood-alcohol level of more than twice the legal limit for driving, Montgomery Police said. The car the decedent was driving at high speed spun out of control and slammed into a steel light pole. The dead passenger, also 17, was also under the influence of alcohol when the crash occurred. A total of five young people died and four injured in Montgomery in three weekend accidents, all of which involved excessive speed, police said. The victims were 16 to 19 years old."*

## Comparison to National Statistics: Motor Vehicle Accidents

Maryland's average mortality rates from motor vehicle accidents for children and young adults for 2001-2003 are higher than national rates (Figure 12; 2002, the most current year for which national data is available). The objective of the Healthy People 2010 goal is to reduce the mortality rate from motor vehicle crashes to no more than 9.2 per 100,000 in the general population (all races, all gender, all ages). In 2002, Maryland's total mortality rate from motor vehicle accidents (all ages) was 13.1 per 100,000 population.



Source: MD data – Analysis of data from Vital Statistics Administration, DHMH  
National data – National Center for Injury Prevention and Control

## Homicides

There were 183 homicides in 2001-2003 among children aged 0 to 17 years. The numbers of homicide deaths among African-American and white children were 151 and 27 respectively, representing rates of 10.9 per 100,000 for African-American children and 1.1 per 100,000 for white children (Table 14). The greatest number of homicides occurred in older adolescents and involved the use of mostly firearms; 82 of the firearm-related deaths were in adolescents aged 15-17 years, representing a rate of 12.0 per 100,000 in this age group (Table 15). There were 27 homicides perpetrated against infants (under one year of age) during this three-year period. Of the 98 firearm-related deaths, 87 (88.8 percent) were among males and 11 (11.2 percent) among females (Table 16).

**TABLE 14. HOMICIDE: TOTAL NUMBER AND AVERAGE RATE\* BY RACE,  
0-17 YEARS, MARYLAND, 2001-2003**

	All homicides		By firearm		Other means	
	Number	Rate*	Number	Rate*	Number	Rate*
African American	151	10.9	90	6.5	61	4.4
White	27	1.1	8	0.3	19	0.7
Am. Indian	0	-	0	-	0	-
Asian & Pac. Is	4	-	0	-	4	-
Other	1	-	0	-	1	-
<b>Total</b>	<b>183</b>	<b>4.4</b>	<b>98</b>	<b>2.4</b>	<b>85</b>	<b>2.1</b>
Hispanic (any race)	8	3.5	0	-	8	3.5

Source: Analysis of data from Vital Statistics Administration, DHMH

\* Per 100,000

-Rates based on fewer than 5 events in the numerator are not presented since rates based on small numbers are likely to be unstable.

**TABLE 15. HOMICIDE: TOTAL NUMBER AND AVERAGE RATE\* BY AGE GROUP, 0-17 YEARS, MARYLAND, 2001-2003**

Age group	By Firearm		Other means	
	Number	Rate*	Number	Rate*
Under 1	2	-	25	11.1
1-4	2	-	25	2.9
5-9	2	-	5	0.4
10-14	10	0.8	8	0.7
15-17	82	12.0	22	3.2
<b>Total</b>	<b>98</b>	<b>2.4</b>	<b>85</b>	<b>2.1</b>

Source: Analysis of data from Vital Statistics Administration, DHMH

\*Per 100,000 population

-Rates based on fewer than five events in the numerator are not presented since rates based on small numbers are likely to be unstable.

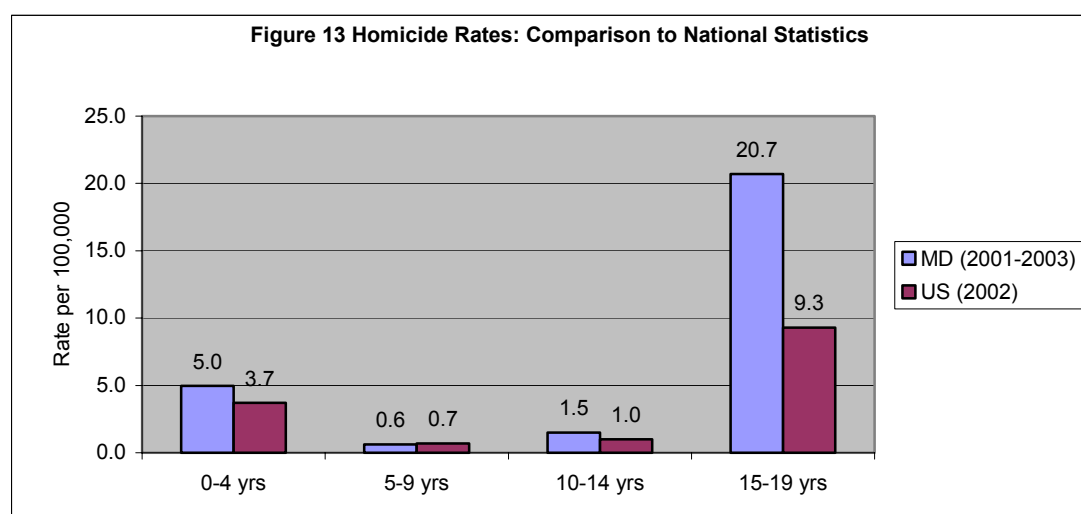
**TABLE 16. MEANS OF HOMICIDE BY SEX, 0-17 YEARS, MARYLAND, 2001-2003**

	Male	Female	Total
By firearm	87	11	98
Other means	49	36	85
<b>Total</b>	<b>136</b>	<b>47</b>	<b>183</b>

Source: Analysis of data from Vital Statistics Administration, DHMH

## Comparison to National Statistics: Homicides

While in the 5-9 years and 10-14 years age groups, Maryland's average homicide rates for 2001-2003 are equal to the 2002 national rate or are slightly higher; the rates for the youngest and oldest children are higher than the national rate (Figure 13; 2002, the most current year for which national data is available). The Healthy People 2010 goal calls for reducing the homicide rate to no more than 3.0 per 100,000 (all races, all gender, all ages). In 2002, Maryland's total mortality rate from homicide (all ages) was 10 per 100,000 population.



Source: MD data – Analysis of data from Vital Statistics Administration, DHMH

National data – National Center for Injury Prevention and Control

*Vignette:*

*W. Baltimore teen fatally shot inside his residence*

*The Baltimore Sun, September 23, 2004*

*“A 16-year old drug dealer with an extensive juvenile arrest record was shot and killed inside his West Baltimore home, police said. Police said the decedent was dealing drugs through a slit in a window screen at his house. The shooter put the gun through the slit.”*

*Vignette:*

*Couple Charged in Baby's Death*

*The Baltimore Sun, January 4, 2005.*

*“A couple was charged with crimes, including first-degree murder in the New Year's Day killing of their infant son. The baby suffered a broken skull, a broken right leg and back injuries, according to court documents. The baby's parents called 911 on New Year's Day to report that he wasn't breathing. The baby was taken by rescue workers from his bassinet in the couple's home to the hospital, where he was pronounced dead.”*

*Vignette:*

*Woman sentenced for shaking toddler*

*The Baltimore Sun, September 4, 2004.*

*“A West Baltimore woman was sentenced to 14 years in prison – with all but five years suspended – for child abuse for shaking and nearly killing a 21-month-old girl in her care. The woman was accused of shaking the baby, resulting in the child's being hospitalized in critical condition at the hospital. Doctors told detectives that the child's injuries, which included severe head injuries and cigarette burns, were consistent with abuse and not from a fall down stairs, as claimed by the accused.”*

## **NATURAL CAUSES OF DEATH**

In addition to being classified according to cause, death is also classified by manner as natural, accident (unintentional), homicide, suicide, and undetermined. Death from natural causes constituted a substantial proportion of mortality among children under 18 years of age in Maryland during the period 2001-2003. A death due to a natural cause can result from one of many serious health conditions. Congenital anomalies, genetic disorders, cancers, heart and cerebral problems, serious infections and respiratory disorders, such as asthma, can be fatal to children. Many of these conditions are not believed to be preventable to the same extent in which unintentional injuries, homicides or suicides are preventable. However, there are some illnesses such as asthma, infectious diseases and some screenable genetic disorders, in which under certain conditions, fatalities can and should be prevented.

## **CHILD DEATHS IN MARYLAND JURISDICTIONS**

Many activities to avoid child deaths occur on the local level through public health and public policy interventions. Specific causes of death may also vary in different geographic locations. Information demonstrating the occurrence of infant and child deaths by jurisdiction is included in the following pages. In these tables and maps, an average rate over five years is used for comparison because a relatively low number of deaths in any jurisdiction in a single year may result in considerable variation which may not indicate an actual significant change. The tables also include an analysis of the change in the rate in jurisdictions over a ten-year period.

Maryland's average infant mortality rate declined by 8.6 percent between 1994-1998 and 1999-2003 (Table 17). However, statistically significant declines occurred only in Montgomery, Prince George's, and Queen Anne's Counties (Infant Mortality Report, Vital Statistics Administration, 2003). Figure 14 details how infant mortality in the jurisdictions compares with the Maryland average during the period 1999-2003.

For children ages 1-17 years, average mortality rate declined by 15.0 percent between 1994-1998 and 1999-2003 (Table 18). Statistically significant declines occurred, however, only in Baltimore City and Anne Arundel County. Changes in the sociodemographic characteristics of the population may also have contributed to changes in rates and percentage changes with respect to infant and child deaths.

The number of childhood deaths by jurisdiction (1999-2003) is shown in Appendix A.

Figure 15 shows the difference between death rates for children ages 1-17 years in the jurisdictions and the Maryland average during the period 1999-2003.

**TABLE 17. NUMBER OF INFANT DEATHS, INFANT MORTALITY RATES\* AND PERCENT CHANGE IN RATES\* BY REGION AND POLITICAL SUBDIVISION, MARYLAND, 1994-1998 AND 1999-20003**

Region and Political Jurisdiction	Number of infant deaths		Average infant mortality rate*		Percent Change**	
	1994-1998	1999-2003	1994-1998	1999-2003		
<b>Maryland</b>	<b>3109</b>	<b>2902</b>	<b>8.6</b>	<b>7.9</b>	<b>-8.6</b>	<b>***</b>
<b>Northwest Area</b>	151	161	5.7	5.7	1.4	
Garrett	12	18	6.7	10.9	62.6	
Allegany	19	30	4.9	8.3	70.4	
Washington	56	45	7.2	5.5	-24.3	
Frederick	64	68	4.9	4.7	-3.5	
<b>Baltimore Metro Area</b>	<b>1450</b>	<b>1363</b>	<b>8.5</b>	<b>8.1</b>	<b>-5.1</b>	
Baltimore City	647	565	12.7	12.1	-4.6	
Baltimore County	355	348	7.8	7.6	-2.9	
Anne Arundel	211	230	6.5	6.8	3.2	
Carroll	60	40	6.3	4.2	-32.8	
Howard	75	105	4.4	6.0	34.0	
Harford	102	75	6.9	5.1	-25.3	
<b>National Capital Area</b>	<b>1182</b>	<b>1044</b>	<b>9.7</b>	<b>8.2</b>	<b>-15.3</b>	<b>***</b>
Montgomery	412	368	6.8	5.6	-17.3	<b>***</b>
Prince George's	770	676	12.6	11.0	-12.7	<b>***</b>
<b>Southern Area</b>	<b>139</b>	<b>137</b>	<b>7.4</b>	<b>6.8</b>	<b>-8.5</b>	
Calvert	27	26	5.9	5.2	-12.3	
Charles	55	63	6.8	7.2	5.8	
St. Mary's	57	48	9.3	7.4	-20.2	
<b>Eastern Shore</b>	<b>187</b>	<b>197</b>	<b>8.2</b>	<b>8.2</b>	<b>-0.1</b>	
Cecil	37	49	6.8	8.4	22.5	
Kent	5	10	5.0	11.2	125.5	
Queen Anne's	22	10	10.1	4.0	-60.1	<b>***</b>
Caroline	20	23	11.0	11.7	6.7	
Talbot	7	9	4.1	5.2	28.3	
Dorchester	13	14	7.8	8.6	9.5	
Wicomico	45	54	8.4	9.4	12.0	
Somerset	12	12	9.6	9.3	-3.3	
Worcester	26	16	10.9	6.5	-40.3	

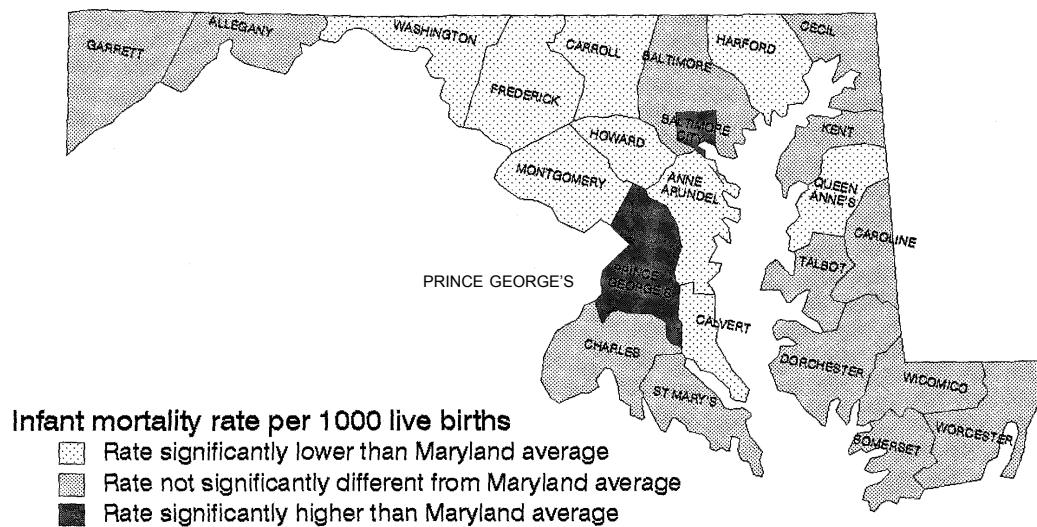
Source: Infant Mortality in Maryland, Vital Statistics, Administration, DHMH

\*Per 1000 live births

\*\*Percent change is based on the exact rates and not the rounded rates presented here.

\*\*\*Rates for 1994-1998 and 1999-2003 differ significantly (p<0.5)

**Figure 14. Comparison of County Infant Mortality Rates  
With the State Average, Maryland, 1999-2003\***



\* Based on aggregate data for the 5 year period.

**TABLE 18. NUMBER OF DEATHS, DEATH RATES AND PERCENT CHANGE IN RATES FOR CHILDREN 1-17 YEARS, MARYLAND, 1994-1998 AND 1999-2003**

Region and Political Jurisdiction	# Deaths*		Death Rates		Death Rates**	
	1994-1998	1999-2003	1994-1998	1999-2003	Change***	
<b>Maryland</b>	<b>1,876</b>	<b>1,702</b>	<b>31.1</b>	<b>26.5</b>	<b>-15.0</b>	<b>****</b>
<b>Northwest Area</b>	<b>112</b>	<b>130</b>	<b>23.4</b>	<b>25.3</b>	<b>8.0</b>	
Garrett	12	12	33.0	33.8	2.5	
Allegany	20	23	26.1	31.5	21.0	
Washington	37	43	26.6	29.5	10.7	
Frederick	43	52	19.0	20	5.3	
<b>Baltimore Metro Area</b>	<b>1020</b>	<b>862</b>	<b>35.5</b>	<b>28.7</b>	<b>-19.0</b>	<b>****</b>
Baltimore City	493	382	59.8	50.6	-15.5	<b>****</b>
Baltimore County	200	180	25.4	21.6	-16.0	
Anne Arundel	147	124	27.3	21.1	-22.7	<b>****</b>
Carroll	50	41	28.1	20.5	-27.1	
Howard	52	65	18.4	19.7	7.0	
Harford	78	70	29.3	24.1	-17.9	
<b>National Capital Area</b>	<b>477</b>	<b>473</b>	<b>25.4</b>	<b>22.7</b>	<b>-10.5</b>	<b>****</b>
Montgomery	163	157	17.2	14.9	-13.3	
Prince George's	314	316	33.6	31.2	-7.2	
<b>Southern Area</b>	<b>112</b>	<b>101</b>	<b>31.2</b>	<b>25.6</b>	<b>-17.8</b>	
Calvert	<b>28</b>	27	30.4	25.3	-16.6	
Charles	51	43	32.8	25.3	-22.9	
St. Mary's	33	31	29.6	26.4	-10.8	
<b>Eastern Shore</b>	<b>155</b>	<b>136</b>	<b>36.1</b>	<b>29.8</b>	<b>-17.3</b>	
Cecil	27	39	26.0	34.2	31.7	
Kent	7	2	36.6	10.5	-71.2	
Queen Anne's	14	12	32.4	24.1	-25.4	
Caroline	9	9	25.2	23.7	-5.8	
Talbot	8	6	24.6	17.3	-29.8	
Dorchester	17	10	50.2	29.8	-40.7	
Wicomico	41	33	42.6	33.5	-21.4	
Somerset	13	6	56.8	27.1	-52.3	
Worcester	19	19	44.9	41.0	-8.8	

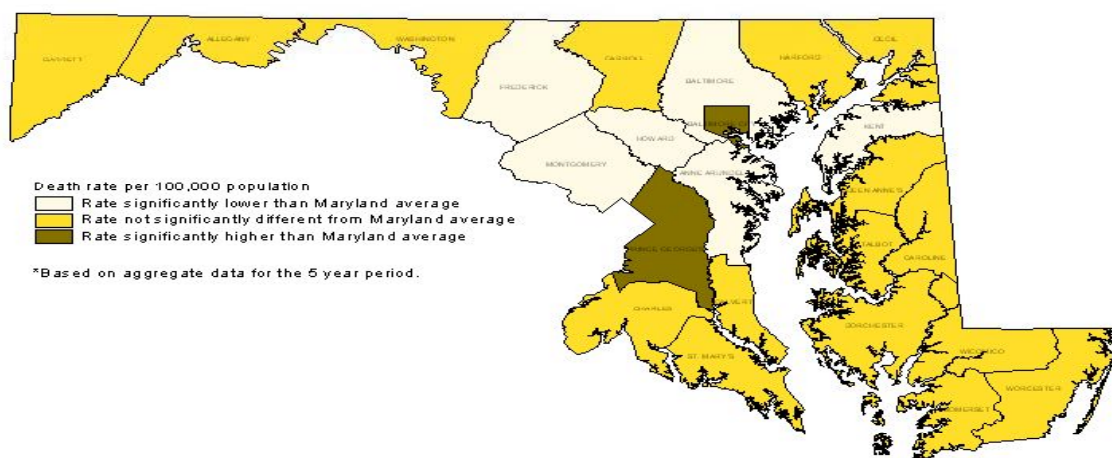
\*Source of data: Analysis of death data from Vital Statistics Administration

\*\*Per 100,000 population

\*\*\*Percent change is based on the exact rates and not the rounded rates presented here

\*\*\*\*Rates for 1994-1998 and 1999-2003 differ significantly (p<.05)

**Figure 15. Comparison of County Death Rates for Children ages 1-17 Years with the State Average, Maryland, 1999-2003\***



## **CLOSING**

Although child deaths and death rates are declining in Maryland, there is still room for improvement. The most common causes of death in children and adolescents are frequently related to preventable factors. Provision of data that describes the extent, distribution and risk factors of childhood deaths is vital to policy makers, health professionals and communities to enable them to make decisions about allocation of resources and institution of effective strategies to prevent future child fatalities, and to monitor progress. The data presented here supplements the review process of local Child Fatality Review teams (CFR) to gain understanding of the circumstances surrounding the death of children in their jurisdictions. Because CFR teams are multi-disciplinary and multi-agency, they are uniquely qualified to understand what no single agency or group working alone can: how and why children are dying in their communities. In many cases, this review provides important information, which can direct appropriate prevention initiatives by local authorities. In addition, state and federal initiatives are important in avoiding preventable deaths in children.

In the future, when the new state CFR database becomes operational to allow for its data to be analyzed, the report will incorporate findings and recommendations of local CFR teams.

**APPENDIX A: NUMBER OF CHILDHOOD DEATHS, 1-17 YEARS, BY JURISDICTION  
MARYLAND, 1993-2003**

<b>Regional and Political Jurisdiction</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>Total</b>
<b>Maryland</b>	<b>346</b>	<b>333</b>	<b>351</b>	<b>340</b>	<b>332</b>	<b>1702</b>
<b>Northwest Area</b>	<b>31</b>	<b>24</b>	<b>25</b>	<b>18</b>	<b>32</b>	<b>130</b>
Garrett	2	5	3	0	2	12
Allegany	6	4	5	2	6	23
Washington	8	7	10	6	12	43
Frederick	15	8	7	10	12	52
<b>Baltimore Metro Area</b>	<b>180</b>	<b>169</b>	<b>165</b>	<b>183</b>	<b>165</b>	<b>862</b>
Baltimore City	84	69	60	93	76	382
Baltimore	43	37	38	31	31	180
Anne Arundel	27	25	26	23	23	124
Carroll	10	9	7	7	8	41
Howard	6	16	16	12	15	65
Harford	10	13	18	17	12	70
<b>National Capital Area</b>	<b>88</b>	<b>96</b>	<b>108</b>	<b>90</b>	<b>91</b>	<b>473</b>
Montgomery	26	38	35	27	31	157
Prince George's	62	58	73	63	60	316
<b>Southern Area</b>	<b>24</b>	<b>20</b>	<b>15</b>	<b>18</b>	<b>24</b>	<b>101</b>
Calvert	7	5	5	2	8	27
Charles	11	4	6	13	9	43
St. Mary's	6	11	4	3	7	31
<b>Eastern Shore</b>	<b>23</b>	<b>24</b>	<b>38</b>	<b>31</b>	<b>20</b>	<b>136</b>
Cecil	5	10	11	9	4	39
Kent	1	0	0	1	0	2
Queen Anne's	1	1	5	2	3	12
Caroline	1	2	1	4	1	9
Talbot	1	1	1	1	2	6
Dorchester	2	2	3	2	1	10
Wicomico	5	6	9	8	5	33
Somerset	2	0	3	1	0	6
Worcester	5	2	5	3	4	19

Source: Analysis of data from Vital Statistics Administration, DHMH